

AMENDMENTS TO THE CLAIMS

1-15 (Canceled)

16. (Currently amended) A process for forming hydrogen from a feedstock comprising the steps of:

preheating a feedstock;

providing said feedstock to an ~~exothermic~~ endothermic reaction reactor;

allowing sufficient residence time for said feedstock in said reactor to undergo an endothermic reaction to yield hydrogen and an endothermic reaction product;

transferring said hydrogen and said endothermic product endothermic reaction to a secondary stage water gas step membrane reactor operating at a lower temperature than said reactor; and

collecting from said secondary stage water gas step membrane reactor a purified hydrogen flow passing through a membrane to a purified hydrogen side and a raffinate gas stream.

17. (Original) The process of claim 16 wherein said feedstock is preheated within a pump supplied boiler.

18. (Original) The process of claim 17 further comprising the step of metering said feedstock to a burner in thermal communication with said reactor so as to maintain said reactor at a temperature promoting the endothermic reaction.

19. (Original) The process of claim 18 further comprising the step of monitoring reactor temperature and communicating reactor temperature to a computer controller.

20. (Original) The process of claim 19 further comprising the step of monitoring reactor pressure and communicating reactor pressure to said computer controller.

21. (Original) The process of claim 16 further comprising the step of combusting said raffinate gas flow in said burner to yield a waste gas stream.

22. (Original) The process of claim 21 further comprising the step of heat exchanging between said waste gas stream and said feedstock so as to preheat said feedstock prior to said reactor.

23. (Original) The process of claim 16 further comprising the step of providing a combustible gas flow to said burner.

24. (Original) The process of claim 22 further comprising the step of providing feedstock to said burner so as to heat said reactor.

25. (Original) The process of claim 23 wherein said combustible gas flow is provided stoichiometrically burn said raffinate.

26. (Canceled)